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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/927,577	08/13/2001	Graham Bank	085874-0364	5427

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EXAMINER	
HARVEY, DIONNE	
ART UNIT	**PAPER NUMBER**
2643	14

DATE MAILED: 08/12/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/927,577	BANK, GRAHAM	
	Examiner	Art Unit	
	Dionne N Harvey	2643	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☐ Claim(s) *1-19* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☐ Claim(s) *1-3,6,9-12,15 and 18* is/are rejected.

7)☐ Claim(s) *4,5,7,8,13,14,16,17 and 19* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 U.S.C. § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

1. Claims 1-3,6,9-12,15 and 18 are rejected under 35 U.S.C. 102(b) as being anticipated by Mochida (US 3,509,290) in view of Paddock (US 5,604,815).

Regarding claims 1 and 10, in figure **1A** Mochida teaches loudspeaker comprising: a panel (1,5,1') *capable* of supporting bending waves (Please note, that the recitation that an element is "capable of" performing a function is not a positive limitation but only requires the ability to so perform); and at least two exciters (2,3) mounted to the panel to produce an acoustic output; each of said exciters being adapted for connection to drive signals (in column 2, lines 10-18, Mochida teaches that drivers **3** are supplied by treble-tone signals while driver **2** is supplied with bass-tone signals.) Mochida does not clearly teach that the treble and bass signals come from independent sources.

In column 8, lines 35-37, Paddock teaches that two drivers (146,14') of a loudspeaker may be provided with upper frequency and lower frequency range signals, respectively, wherein the upper frequency and lower frequency range signals originate from "separate audio signal sources". It would have been

obvious for one of ordinary skill in the art at the time of the invention to combine the teachings of Mochida and Paddock, for the purpose of providing a single full-frequency range output signal.

Regarding Claims 2 and 11, since different frequencies produce different sound pressure levels, Mochida teaches drivers operating at bass and treble frequencies, and therefore teaches that the maximum sound pressure level for the treble driver is different than the maximum sound pressure level of the bass driver.

Regarding claims 3 and 6, Since the maximum frequency bandwidth of the treble driver is defined as all frequencies above 261.63 Hz, and the maximum frequency bandwidth of the bass driver is defined as all frequencies below 261.63 Hz, Mochida therefore teaches that the maximum frequency bandwidth of one exciter is greater than the other exciter.

Regarding claim 9, the combination of Mochida and Paddock does not specifically teach that the loudspeaker may be adapted for installation and operation in a ceiling tile. However, the Examiner takes Official Notice that the adaptation of a loudspeaker for installation and operation in a ceiling tile is well known in the art and it would have been obvious to adapt a flat loudspeaker for installation and operation as a ceiling tile, thereby overcoming the faults of existing technology which includes excessive sound intensity, directional effects and poorer intelligibility.

Regarding claims 12 and 15, Since the maximum frequency bandwidth of the treble driver is defined as all frequencies above 261.63 Hz, and the maximum

frequency bandwidth of the bass driver is defined as all frequencies below 261.63 Hz, Mochida therefore teaches that the maximum frequency bandwidth of one exciter is greater than the other exciter.

Regarding claim 18, in figure **2,** the combination of Mochida and Paddock teaches a method of operating a loudspeaker, as inherently taught by the structure of the apparatus, comprising: a panel (1,5,1') *capable* of supporting bending waves; and at least two exciters (2,3) mounted to the panel to produce an acoustic output; each of said exciters being adapted for connection to drive signals (in column 2, lines 10-18, Mochida teaches that drivers **3** are supplied by treble-tone signals while driver **2** is supplied with bass-tone signals.) Mochida does not clearly teach that the treble and bass signals come from independent sources.

In column 8, lines 35-37, Paddock teaches that two drivers (146,14') of a loudspeaker may be provided with upper and lower frequency range signals, respectively, wherein the upper and lower range signals originate from "separate audio signal sources". It would have been obvious for one of ordinary skill in the art at the time of the invention to combine the teachings of Mochida and Paddock, for the purpose of providing a single full-frequency range output signal.

2. Claims 1-3, 6, 9-12,15 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Watters et al. (US 3,347,335).

Regarding claims 1 and 10, in figure **8,** Watters teaches loudspeaker comprising: a panel (1,5,1') capable of supporting bending waves (see column 2, lines 50-52) and at least two exciters (3) mounted to the panel for exciting bending waves in the panel to produce an acoustic output. In column 4, lines 65-68, Watters teaches that "...it is also possible to detect or radiate different signals under complementary angles..."

Though Watters teaches that the transducers may radiate different signals, he does not clearly state that the different signals originate from independent drive sources. As an example, Watters teaches that the different signals *might comprise* two components of a stereophonic sound recording (see column 4, lines 68-69). With regard to the example given by Watters, according to Administrative Patent Judges, Stuart S. Levy and Lee E. Barrett, "teaching away is rare and merely doing something differently does not teach away. See In re Gurley, 27 F. 3d 551, 553, 31 USPQ2d 1130, 1131 (Fed. Cir. 1994) ("A reference may be said to teach away when a person of ordinary skill, upon [examining] the reference, would be discouraged from following the path set out in the reference, or would be led in a direction divergent from the path that was taken by the applicant.")."

Watters teaches that the two signals might comprise two components of a stereophonic sound recording, merely for illustrative purposes. In fact, Watters does not restrict that the different signals transmitted to the respective two

exciters (3) always comprise two components of a stereophonic sound recording. Therefore, it would have been obvious for one of ordinary skill in the art at the time of the invention to connect the two exciters (3) to respective independent sources of drive signals, based upon Watters teaching in column 4, lines 65-68, which states "...it is also possible to detect or radiate different signals under complementary angles...", thereby reading on the claim limitation "each of said exciters being adapted for connection to respective independent sources of drive signals."

Regarding claims 2 and 11, Watters teaches the loudspeaker structure as set forth by the limitations of claim 1, and therefore teaches that the exciters are *capable of* generating a maximum sound pressure level, the maximum sound pressure levels being different, as broadly claimed. Please note, that the recitation that an element is "capable of" performing a function is not a positive limitation but only requires the ability to so perform.

Regarding claims 3 and 6, Watters teaches the loudspeaker structure as set forth by the limitations of claim 1, and therefore teaches that each of said exciters is *capable of* generating sound across a maximum frequency bandwidth, the maximum frequency bandwidth of one of the exciters being greater than that of the other exciter(s).

Regarding claim 9, Watters does not specifically teach that the loudspeaker may be adapted for installation and operation in a ceiling tile. However, the Examiner takes Official Notice that the adaptation of a loudspeaker for installation and operation in a ceiling tile is well known in the art and it would

have been obvious to adapt a flat loudspeaker for installation and operation as a ceiling tile, thereby overcoming the faults of existing technology which includes excessive sound intensity, directional effects and poorer intelligibility.

Regarding claims 12 and 15, Watters teaches the loudspeaker structure as set forth by the limitations of claim 1, and therefore teaches that each of said exciters is *capable of* generating sound across a maximum frequency bandwidth, the maximum frequency bandwidth of one of the exciters being greater than that of the other exciter(s).

Regarding claim 18, in figure **8,** Watters teaches a method of operating a loudspeaker, as inherently taught by the structure of the apparatus, comprising a panel (1,5,1') capable of supporting bending waves (see column 2, lines 50-52) and at least two exciters (3) mounted to the panel for exciting bending waves in the panel to produce an acoustic output. In column 4, lines 65-68 Watters further teaches that "...it is also possible to detect or radiate different signals under complementary angles...", which reads on the claimed limitation "each of said exciters being adapted for connection to respective independent sources of drive signals."

Allowable Subject Matter

3. Claims 4,5,7,8,13,14,16,17 and 19 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

4. Applicant's arguments with respect to claims 1-19 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dionne Harvey whose telephone number is (703) 305-1111. The examiner can normally be reaches on Monday through Friday from 8:30am to 6:00pm.

Any responses to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, DC 20231

or faxed to:

(703) 308-6306, for formal communications for entry

Or:

(703) 308-6296, for informal or draft communications, please label "PROPOSED" or "DRAFT".

Hand delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA., Sixth Floor(Receptionist)

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Curtis Kuntz, can be reached at (703) 305-4708.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dionne Harvey whose telephone number is (703) 305-1111.

D.H.

August 8, 2004

HUYEN LE
PRIMARY EXAMINER